

### REMARKS

Applicants acknowledge receipt of the office action dated July 14, 2006, in which the Examiner rejected claims 1-10, 17-19, 21-25, 28-32 and 35 as anticipated by Naka (US 5059336), rejected claims 1-10, 19-19, 21-25, 28-32, and 35 as obvious over Naka in view of Ozaki (JP 06017080) and Naka (US 5498357); rejected claims 11-16, 20-26, 27, 33, and 34 as obvious over Naka (US 5059336) in view of Ozaki (JP 06017080), Naka (US 5498357), and Hasegawa (US5854183); rejected claims 1-4, 17, 18, 21-23, 28-30, and 35 as obvious over Ozaki (JP 02077494) in view of Naka (US 5498357); rejected claims 11-6, 20, 26, 27, 33 and 34 as obvious over Ozaki (JP 02077494) in view of Naka (US 5498357) and Hasegawa (US5854183); rejected claims 5-10, 19, 24, 25, 31, and 32 as obvious over Ozaki (JP 02077494) in view of Naka (US 5498357) and Hasegawa (US5854183) and Ozaki (US 5585336).

#### § 102 Rejection of claims 1-10, 17-19, 21-25, 28-32 and 35 as anticipated by Naka (US 5059336)

In support of this rejection, the Examiner states

“US ‘336 discloses a grease composition comprised of a urea thickener in base oil (column 1, lines 5-10). The thickener is disclosed as a diurea compound or a mixture of at least two diurea compounds with the following formula:



where R1 is a divalent aromatic hydrocarbon residue and R2 and R3 are independently an alkyl or alkenyl group having 8 to 20 carbon atoms (column 2, lines 62-68; column 3, lines 1-11).” (Office Action, page 2)

In making this rejection, the Examiner fails to include certain relevant features of the ‘336 disclosure that distinguish the reference from the present invention. Specifically, the ‘336 reference expressly teaches that the terminal R groups, (R<sub>2</sub> and R<sub>3</sub> in ‘336) must include at least 20% cyclohexyl or cyclohexyl-derived groups. (column 3, lines 7-18). In contrast, the present claims recite that “R<sub>1</sub> is a C<sub>6-10</sub> saturated alkyl group and R<sub>3</sub> is a C<sub>14-40</sub> saturated and/or unsaturated alkyl group.” Thus, neither terminal group of the present compounds can include a cycloalkyl group.

The ‘336 reference goes on to state that “If the relative contents of the cyclohexyl groups and/or the groups derived from cyclohexyl are less than 20%, the dropping point is markedly lowered and the thickened state is deteriorated, whereas, if the relative contents exceed 90%, the

amount of the thickener to be used is increased with obvious economic demerits.” Thus, not only does the ‘336 reference not anticipate the present claims, but the reference itself explicitly teaches away from the claimed compositions, which do not include any cyclohexyl groups.

For these reasons, Applicant submits that the rejection is not supportable and therefore respectfully requests that it be withdrawn.

§ 103 Rejection of claims 1-10, 19-19, 21-25, 28-32, and 35 as obvious over Naka ‘336 in view of Ozaki (JP 06017080) and Naka (US 5498357)

In addition to the rejection over the ‘336 reference alone, the Examiner rejects claims 1-10, 19-19, 21-25, 28-32, and 35 as obvious over Naka ‘336 in view of Ozaki (JP 06017080) and Naka (US 5498357). Applicant respectfully submits that this rejection must also fail.

First, as set out above, the ‘336 reference relates to a diurea in which a certain fraction of the terminal groups must be cyclohexyl groups, while the present invention relates to a compound in which the terminal groups are alkyl groups. In addition, the ‘336 reference makes no teaching or suggestion with respect to the claimed proportions of compounds (a) and (b).

The Examiner cites JP ‘080 for a teaching that a diurea having a tolylene group at its center and C<sub>16-18</sub> alkyl groups on its ends may be combined with a diurea having a diphenylmethane group at its center and C<sub>8</sub> alkyl groups on its ends. The Examiner further cites JP ‘080 for its teaching that the two diureas may be combined such that the mol ratio of the second compound to the first is 20-90 mol%.

The Examiner correctly notes that the two diureas that are combined in JP ‘080 are different from the presently claimed compounds. In order to connect the JP ‘080 reference to the present invention, the Examiner cites the Naka ‘357 reference. The Examiner states that because the ‘357 reference teaches making diureas that have *either* tolylene *or* diphenylmethane groups at their centers, “the two compounds are very similar” and it would have been obvious to substitute one for the other.

Applicant respectfully submits that the Examiner is misconstruing the teachings of the ‘357 reference. The ‘357 reference is not concerned with noise reduction and includes no data with regard to noise reduction. However, the Comparative Examples of the present case illustrate clearly the differences between tolylene- and diphenylmethane-based diureas. Specifically, the Examiner is requested to consider the following pairs of Comparative Examples as set out in

Tables 5 and 6 of the present specification (reproduced below for confirmation): Examples 1 and 9; Examples 2 and 10; and Examples 3 and 11.

TABLE 5

	Comparative Example					
	1	2	3	4	5	6
MDI (g)	11.80	7.95	12.95	11.80	—	—
TDI (g)	—	—	—	—	12.15	12.27
TDI (g)	—	—	—	—	13.87	—
Glycidol (g)	—	—	—	—	13.73	—
Glycidol (g)	—	—	—	—	—	—
p-Chlorophenol (g)	—	—	13.07	—	—	—
p-Chlorophenol (g)	—	—	—	12.12	—	—
Mineral oil (g)	176	176	176	176	176	176
Thickness content (%)	12	12	12	12	12	12
Consistency (dynes)	279	258	326	400	325	372
Dropping point (°C)	>250	185	>250	>250	>250	>250
Gil separation (mass %)	1.2	3.9	7.7	7.6	6.8	3.1
Noise test after 120 s	52	56	2,229	>10,000	151	191

TABLE 6

	Comparative Example					
	7	8	9	10	11	12
MDI (g)	—	—	—	—	—	—
TDI (g)	13.25	12.22	—	—	—	—
TDI (g)	—	—	9.66	6.15	16.76	9.14
Glycidol (g)	—	—	—	14.24	—	—
Glycidol (g)	—	—	—	—	13.85	—
p-Chlorophenol (g)	—	—	—	—	13.24	—
p-Chlorophenol (g)	—	—	11.79	—	—	14.26
Mineral oil (g)	176	176	176	176	176	176
Thickness content (%)	12	12	12	12	12	12
Consistency (dynes)	400	408	408	372	369	400
Dropping point (°C)	>250	>250	182	151	>250	>250
Gil separation (mass %)	8.6	3.5	23.5	80.5	3.4	5.4
Noise test after 120 s	461	>10,000	678	924	581	>10,000

To facilitate the Examiner's review, those pairs of Examples are reproduced next to each other below. When the noise test values (circled below) for each pair of Examples are compared, it can plainly be seen that MDI- and TDI- derived diureas do not behave similarly and are not interchangeable. Thus, the combined teachings of the cited references do not suffice to support the present rejection of claims 1-10, 19-19, 21-25, 28-32, and 35 as obvious.

	1	9	2	10	3	11
MDI →	11.80	—	7.95	—	12.95	—
TDI →	—	—	—	—	—	—
	12.25	14.34	—	6.15	—	10.76
	—	—	16.05	13.85	—	—
	—	—	—	—	13.07	13.24
	—	—	—	—	—	—
	176	176	176	176	176	176
	12	12	12	12	12	12
	279	408	258	372	326	369
	>250	182	186	151	>250	>250
	1.2	20.5	3.9	80.5	2.2	3.4
Noise test →	52	678	56	424	2,229	581

For all of these reasons, Applicant respectfully submits that the rejection of claims 1-10, 19-19, 21-25, 28-32, and 35 is not supportable and therefore respectfully requests that it be withdrawn.

§ 103 Rejection of claims 11-16, 20-26, 27, 33, and 34 as obvious over Naka '336 in view of Ozaki (JP 06017080), Naka (US 5498357), and Hasegawa (US5854183)

To support the obviousness rejection of claims 11-16, 20-26, 27, 33, and 34, which require the presence of a molybdenum compound in the lubricating composition, the Examiner combines the three references cited against claim 1, with the teachings of the '183 reference, which suggests the use of certain molybdenum compounds. Applicants submit, however, that this rejection must fail, for the same reasons that the underlying rejection of claim 1 fails. Namely, the three references, whether considered separately or in combination, do not teach or suggest the grease compositions claimed in the present claims. Because the underlying grease compositions are not taught, the addition of a molybdenum compound does not produce the compositions claimed in claims 11-16, 20-26, 27, 33, and 34. Therefore, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

§ 103 Rejection of claims 1-4, 17, 18, 21-23, 28-30, and 35 as obvious over Ozaki (JP 02077494) in view of Naka (US 5498357)

Like JP '080, the JP '494 reference teaches a grease that contains diureas derived from both MDI and non-MDI sources.<sup>1</sup> In support of this rejection, therefore, the Examiner again relies on the teachings of the '357 reference to bridge the gap between the teachings of the primary reference (JP '494) and the present claims. Specifically, the Examiner states that because the '357 reference teaches making diureas that have *either* tolylene *or* diphenylmethane groups at their centers, "the two compounds are very similar and would inherently function the same." The Examiner then concludes that it would have been obvious to substitute the bitolylene group for a diphenylmethane group.

As set out in detail on page 9 of this Response, the bitolylene and diphenylmethane moieties do not give similar acoustic properties and are not interchangeable. One of ordinary skill in the art contemplating the cited references would not be lead to believe that the modification of the greases taught by JP '494 would result in improved acoustic properties.

Furthermore, because the JP '494 reference teaches that the greases made according to that reference have "particularly excellent acoustic properties" (page 4, lines 14-16 of the English translation), one reading that reference would not expect that the acoustic properties could be

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<sup>1</sup> For ease of review, a translation of the JP '494 references is submitted herewith as Exhibit A.

improved further and therefore would not be motivated alter the formulation from that taught by the JP '494 reference.

For all of these reasons, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

§ 103 Rejection of claims 11-6, 20, 26, 27, 33 and 34 as obvious over Ozaki (JP 02077494) in view of Naka (US 5498357) and Hasegawa (US5854183)

This rejection parallels the rejection of claims 11-16, 20-26, 27, 33, and 34 over Naka '336 in view of Ozaki (JP 06017080), Naka (US 5498357), and Hasegawa (US5854183), and is deficient for the same reasons. Namely, because the cited references do not teach or suggest the presently claimed invention, even when considered in the aggregate, it cannot be said that they render the present invention obvious.

§ 103 Rejection of claims 5-10, 19, 24, 25, 31, and 32 as obvious over Ozaki (JP 02077494) in view of Naka (US 5498357) and Hasegawa (US5854183) and Ozaki (US 5585336)

As above, this rejection is built on the combined teachings of a reference that teaches a different composition from the presently claimed compositions and a reference that purportedly suggests the interchangeability of diphenylmethane- and tolylene-derived compounds. Because, as set out on page 9 *supra*, these compounds are not in fact interchangeable, it would not be obvious to formulate greases having the claimed compositions and these rejection must also fail. Applicant therefore respectfully requests that the Examiner reconsider and withdraw the rejection.

#### Conclusion

In view of the foregoing, Applicants believe that all of the claims are in condition for allowance and favorable consideration by the Examiner is requested. Should the Examiner find any impediment to the prompt allowance of the claims that can be corrected by telephone interview, the Examiner is requested to initiate such an interview with the undersigned.

Respectfully submitted,  
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